

Gene	gD	Gene
HSV2		
HSV1		

AGAGCGGTGGGGGGGGGGGGAAGAACTAAAACACATCAAGCCCCACACCTCCACAGGGGGGTTATGGC
CCCCGGCCCCCAACAAAAATCACGGT

Gene	gD	Gene
HSV2		
HSV1		

* * * * *

GGACCCACC--GCACCACCATACTCCGATTCGACCACATATGCAACCAAATCACCCCCAGAGGGGAAGGTTCAT

AGCCCGCCGTTGACACTATCGTCCATACCGACCACA-----CCGACGAACCCCTAAGGGGGAGGGGCCCAT

* * * * *

Gene	gD	Gene
HSV2		
HSV1		

*
 "TATA1"
 * * * * * * * * * * * *
 "TATA2"
 * * * * * * * * * * * *

 TTTACGAGGAGGAGGTATAATAGAGTCCTTGTTGTTTTAAACCCGGGTCGGGTGGTGTTCGGTCATAAGCT
 TTTA-CGAGGAGGAGGGGTAAACAAGTCIGCTCTTAAAAAGCAGGGGTTAGGGA-GTGTTCGGTCATAAGCT

Gene	gD	Gene
HSV2		
HSV1		

**
 *GCATTGCGAACGA--C-TAGTCGGCC--GTTTTTCG--TGTCATCGCGTATCACGGC
 TCAGCGGAACGACCCTACCCCGATCATCAGTTA-TCCTTAAGGTC--TCITTTGTGGTGGCTC--CGGT
 *****↑*****

Gene	gD	gD	gD	gD
HSV2				
HSV1				
Gene				
Prote				
Prote				

* * * * *

ATGGGCGCTTGACCTCCGGCGTCGGGACGGCGGCCCTGCTAGTTGTGCGGGTGGGACTCCGGCGTCGTCGCGCC

ATGGGCGGCGCTGCCGCCAGGTTGGGGCCGCGATTGTTTGTGTCGCATAGTGGGCTCCATGGGGTCCGCGGC

MetGlyArgLeuThrSerGlyValGlyThrAlaAlaLeuLeuValValAlaValAlaValCysAla

MetGlyGlyAlaAlaAlaArgLeuGlyAlaValIleLeuPheValValIleValGlyLeuHisGlyValArgGly

+Thr

Fig. 1A (Part 2)

Gene	Protein	Position	Sequence
HSV2 gD	Gene	76	AAATACGCCTTAGCAGACCCCTCGCTTAAGATGGCCGATCCCAATCGATTTTCGCGGGAAGAACCTTCCGGTTTGG
HSV1 gD	Gene		AAATATGCCTTGGCGGATGCCTCTCTCAAGATGGCCGACCCCAATCGCTTTTCGCGGCAAGACCTTCCGGTCCCTG
HSV2 gD	Protein	26	LysTyrAlaLeuAlaAspProSerLeuLysMetAlaAspProAsnArgPheArgGlyLysAsnLeuProValLeu
HSV1 gD	Protein		LysTyrAlaLeuAlaAspAlaSerLeuLysMetAlaAspProAsnArgPheArgGlyLysAspLeuProValLeu
HSV2 gD	Gene	151	GACCAGCTGACCGACCCCGGGGTGAAGCGTGTATACACATTCAGCCGAGCCTGGAGGACCCGTTCCAGCCCC
HSV1 gD	Gene		GACCAGCTGACCGACCCCTCCGGGGGTCCGGCGGTGTACACATCCAGGCGGGCTTACCGAACCCGTTCCAGCCCC
HSV2 gD	Protein	51	AspGlnLeuThrAspProProGlyValLysArgValTyrHisIleGlnProSerLeuGluAspProPheGlnPro
HSV1 gD	Protein		AspGlnLeuThrAspProProGlyValArgArgValTyrHisIleGlnAlaGlyLeuProAsnProPheGlnPro
HSV2 gD	Gene	226	CCCAGCATCCCGATCACTGTGTACTACGCAGTGTGGAAACGTGCCTGCCGACGCGTGTCTCTACATGCCCCATCG
HSV1 gD	Gene		CCCAGCTCCCGATCAGGTTTACCGCGGTGTG---GAGCGGCGCTGCCGACGCGTGTCTCTAAACGCACCCGTCG
HSV2 gD	Protein	76	ProSerIleProIleThrValTyrTyrAlaValLeuGluArgAlaCysArgSerValLeuLeuHisAlaProSer
HSV1 gD	Protein		ProSerLeuProIleThrValTyrAlaValLeu---GluArgAlaCysArgSerValLeuLeuAsnAlaProSer
HSV2 gD	Gene	301	GAGGCCCCCAGATCGTTCGCGGGGGCTTCGGACGAGGGCCCGAAAGCACACGTACAACTGACCATCGCTGGTAT
HSV1 gD	Gene		GAGGCCCCCAGATTGTTCGCGGGGGCTCCGAAGACGTCCGAAACAACTTACAACTGACCATCGCTTGGTTT
HSV2 gD	Protein	101	GluAlaProGlnIleValArgGlyAlaSerAspGluAlaArgLysHisThrTyrAsnLeuIleAlaTrpTyr
HSV1 gD	Protein		GluAlaProGlnIleValArgGlyAlaSerGluAspValArgLysGlnProTyrAsnLeuIleAlaTrpPhe
HSV2 gD	Gene	376	CGCATGGGAGACAAATTCGGCTATCCCCCATCACGGTTATGGAATACACCGAGTGCCCCCTACAACAAGTCGTTGGGG
HSV1 gD	Gene		CGGATGGGAGGCAACTIGCTATCCCCCATCACGGTCATGGAGTACACCGAATGCTCTCTACAACAAGTCTCTGGGG
HSV2 gD	Protein	126	ArgMetGlyAspAsnCysAlaIleProIleThrValMetGluTyrThrGluCysProTyrAsnLysSerLeuGly
HSV1 gD	Protein		ArgMetGlyGlyAsnCysAlaIleProIleThrValMetGluTyrThrGluCysSerTyrAsnLysSerLeuGly

Fig. 1A(Part 3)

Gene	Accession	Protein	Residue	Sequence
HSV2 gD	451	Gene	451	GFCIGCCCCCATCCGAAACGCAGCCCCCGCTGGAGCTACTATGACAGCTTTAGCGCCGTCAGCGAGGATAACCTGGGA
HSV1 gD	151	Gene	151	GCCGTGCCCATCCGAAACGCAGCCCCCGCTGGAACCTACTATGACAGCTTCAGCGCCGTCAGCGAGGATAACCTGGGG
HSV2 gD	151	Protein	151	ValCysProIleArgThrGlnProArgTrpSerTyrTyrAspSerPheSerAlaValSerGluAsnLeuGly
HSV1 gD	151	Protein	151	AlaCysProIleArgThrGlnProArgTrpAsnTyrTyrAspSerPheSerAlaValSerGluAsnLeuGly
HSV2 gD	526	Gene	526	TTCTGATGCACGCCCCCGCTTCGAGACCGGGGTACGTACCTTGC GGCTAGTGAAGATAAACGACTGGACGGAG
HSV1 gD	176	Gene	176	TTCTGATGCACGCCCCCGCTTGAGACCGCGGCACGTACCTTGC GGCTCGTGAAGATAAACGACTGGACGGAG
HSV2 gD	176	Protein	176	PheLeuMetHisAlaProAlaPheGluThrAlaGlyThrTyrLeuArgLeuValLysIleAsnAspTrpThrGlu
HSV1 gD	176	Protein	176	PheLeuMetHisAlaProAlaPheGluThrAlaGlyThrTyrLeuArgLeuValLysIleAsnAspTrpThrGlu
HSV2 gD	601	Gene	601	ATCACACAATTTATCTTGGAGCACCGGGCCCCCGCTCCTGTCAAGTACGCTCTCCCCCTGCGCATCCCCCGGCA
HSV1 gD	201	Gene	201	ATTACACAGTTTATCTTGGAGCACCGAGCCCAAGGCTCCTGTAAGTACACCTCCCGCTGCGCATCCCCCGTCA
HSV2 gD	201	Protein	201	IleThrGlnPheIleLeuGluHisArgAlaArgAlaSerCysLysTyrAlaLeuProLeuArgIleProProAla
HSV1 gD	201	Protein	201	IleThrGlnPheIleLeuGluHisArgAlaLysGlySerCysLysTyrAlaLeuProLeuArgIleProProSer
HSV2 gD	676	Gene	676	GCGTGCCCTCACCTCGAAGGCCCTACCAACAGGGCGGTGACGGTCGACAGCATCGGGATGTTACCCCGCTTTACTCCC
HSV1 gD	226	Gene	226	GCGTGCCCTCTCCCCCAGGCCCTACCAGCAGGGGGGTGACGGTGGACAGCATCGGGATGCTGCCCGCTTCATCCCC
HSV2 gD	226	Protein	226	AlaCysLeuThrSerLysAlaTyrGlnGlnGlyValThrValAspSerIleGlyMetLeuProArgPheThrPro
HSV1 gD	226	Protein	226	AlaCysLeuSerProGlnAlaTyrGlnGlnGlyValThrValAspSerIleGlyMetLeuProArgPheIlePro
HSV2 gD	751	Gene	751	GAAACACGCGCACCGTCGCCCTATACAGCTTAAAAATCGCCGGGTGGCACGGCCCCCAAGCCCCCGTACACCCAGC
HSV1 gD	251	Gene	251	GAGAACACGCGCACCGTCGCCGTATACAGCTTGAAGATCGCCGGGTGGCACGGCCCCCAGGCCCATACACGAGC
HSV2 gD	251	Protein	251	GluAsnGlnArgThrValAlaLeuTyrSerLeuLysIleAlaGlyTrpHisGlyProLysProProTyrThrSer
HSV1 gD	251	Protein	251	GluAsnGlnArgThrValAlaValTyrSerLeuLysIleAlaGlyTrpHisGlyProArgAlaProTyrThrSer

Fig. 1B(Part 1)

HSV2 gD Gene	826	* * * * *	ACCCTGCTGCCGCGGAGCTGTCCGACACCAACGCGCCACGCAACCCGAACTCGTTCCGGGAAGACCCCGGAGGAC	* * *
HSV1 gD Gene			ACCCTGCTGCCGCGGAGCTGTCCGAGACCCCAACGCGCCAGCCAGAACTCGCCCGGGAAGACCCCGGAGGAT	
HSV2 gD Protein	276		ThrLeuLeuProProGluLeuSerAspThrThrAsnAlaThrGlnProGluLeuValProGluAspProGluAsp	
HSV1 gD Protein			ThrLeuLeuProProGluLeuProGluThrProAsnAlaThrGlnProGluLeuAlaProGluAspProGluAsp	
			+Ser	
HSV2 gD Gene	901	* * * * *	TCGGCCCTCTTAGAGGATCCCGCGGACGGTGCTTCGCGAGATCCCCCAAACTGGCACATCCCGTCGATCCAG	* * *
HSV1 gD Gene			TCGGCCCTCTTAGAGGACCCCGTGGGACGGTGGCGCGCAATCCCAAACTGGCACATCCCGTCGATCCAG	
HSV2 gD Protein	301		SerAlaLeuLeuGluAspProAlaGlyThrValSerSerGlnIleProProAsnTrpHisIleProSerIleGln	
HSV1 gD Protein			SerAlaLeuLeuGluAspProValGlyThrValAlaProGlnIleProProAsnTrpHisIleProSerIleGln	
HSV2 gD Gene	976	* * * * *	GACGTCGCGCGG---CACCACGCGCCCGCGCCAGCCCAACCCGGGCGCTGATCATCGGCGCGCTGGCCGGCAGT	* * *
HSV1 gD Gene			GACGCGCGGAGCGCCTTACCATCCCGCGGCGCACCCGGAACAACATGGGCGCTGATCGCGCGCGGTGGCGGCGCAGT	
HSV2 gD Protein	326		AspValAlaPro---HisHisAlaProAlaAlaProAlaAsnProGlyLeuIleTleGlyAlaLeuAlaGlySer	
HSV1 gD Protein			AspAlaAlaThrProTyrHisProProAlaAlaThrProAsnAsnMetGlyLeuIleAlaGlyAlaValGlyGlySer	
HSV2 gD Gene	1051	** * * * *	ACCCCTGGCGGCGCTGCTCATCGGCGGTATTGCGTTTGGGTACGCGCGCGGCGCTCAGTGGCCCGCCCAAGCGCCTA	* * *
HSV1 gD Gene			CTCCTGGCAGCCCTGGTCAATTGCGGAATTGTGTACTGGATGCGCGCGCGCACACTCGGAAAGCCCAAGCGCATA	
HSV2 gD Protein	351		ThrLeuAlaAlaLeuValIleGlyGlyIleAlaPheTrpValArgArgArgArgSerValAlaProLysArgLeu	
HSV1 gD Protein			LeuLeuAlaAlaLeuValIleCysGlyIleValTyrTrpMetArgArgArgThrArgLysAlaProLysArgIle	
			+His	

Fig. 1B(Part 2)

HSV2 gD Gene	1126	*	CGTCTCCCCACATCCGGGATGACGACGCGCCCTCGCACCAGCCATTGTTTTACTAGAGGAGTTTCCCCGCT	**** *	*
HSV1 gD Gene			CGCTCCCCCACATCCGGGAAAGACGACGAGCCGTCCTCGCACCAGCCCTTGTTTTACTAGA-----TACCCC---		
HSV2 gD Protein	376		ArgLeuProHisIleArgAspAspAlaTalaProProSerHisGlnProLeuPheTyrSTOP		
HSV1 gD Protein			ArgLeuProHisIleArgGluAspAspGlnProSerSerHisGlnProLeuPheTyrSTOP		
HSV2 gD Gene		*	***** * **** ** *** * * **** * * **** * *	"TATA3"	
HSV1 gD Gene			CCCGGTACCTCTGAGGCCC-GGTGGA--GGGTGGCTGGGGTATTTAGGGTGGGACTTGGACTCCGCATAAAGG		
			CCCTTAATGGG-TGCGGGGGGTCAGGTCCTGCGGGGTG-----GGATGGGACCTTAACCTCCATATAAAGG		
HSV2 gD Gene		*	AGTCTCGAAGGGGAAACTAGGACAGTTTCATAGGCCGGGAGCGTGGGGCGCGCGCGCGGCTGCTCCGACGATTAG	*****	
HSV1 gD Gene			AGTCTGGAAGGGGGAAAGCGGACAGTCGATAAGTCGGTAGCGGGGGACGCGCACC---TGTTCC-----G		
HSV2 gD Gene		*	CCAGCCGCGCCACAGCCACCTC--GACCCGGTCCGATCCGCGGTATGCCCGGCGCTCGCTGCAGGGCCTGGCGG		
HSV1 gD Gene			CCTGTGCGCACCACAGCTTTTTCGGAACCG-TCCCGTTT		
HSV2 Open Reading Frame			MetProGlyArgSerLeuGlnGlyLeuAla		
HSV2 gD Gene			ATCCTGGGCCTGTGGGTCTGCGCCACCGGCTGGTCCGT		
HSV2 Open Reading Frame			IleLeuGlyLeuTrpValCysAlaThrGlyLeuValArg		

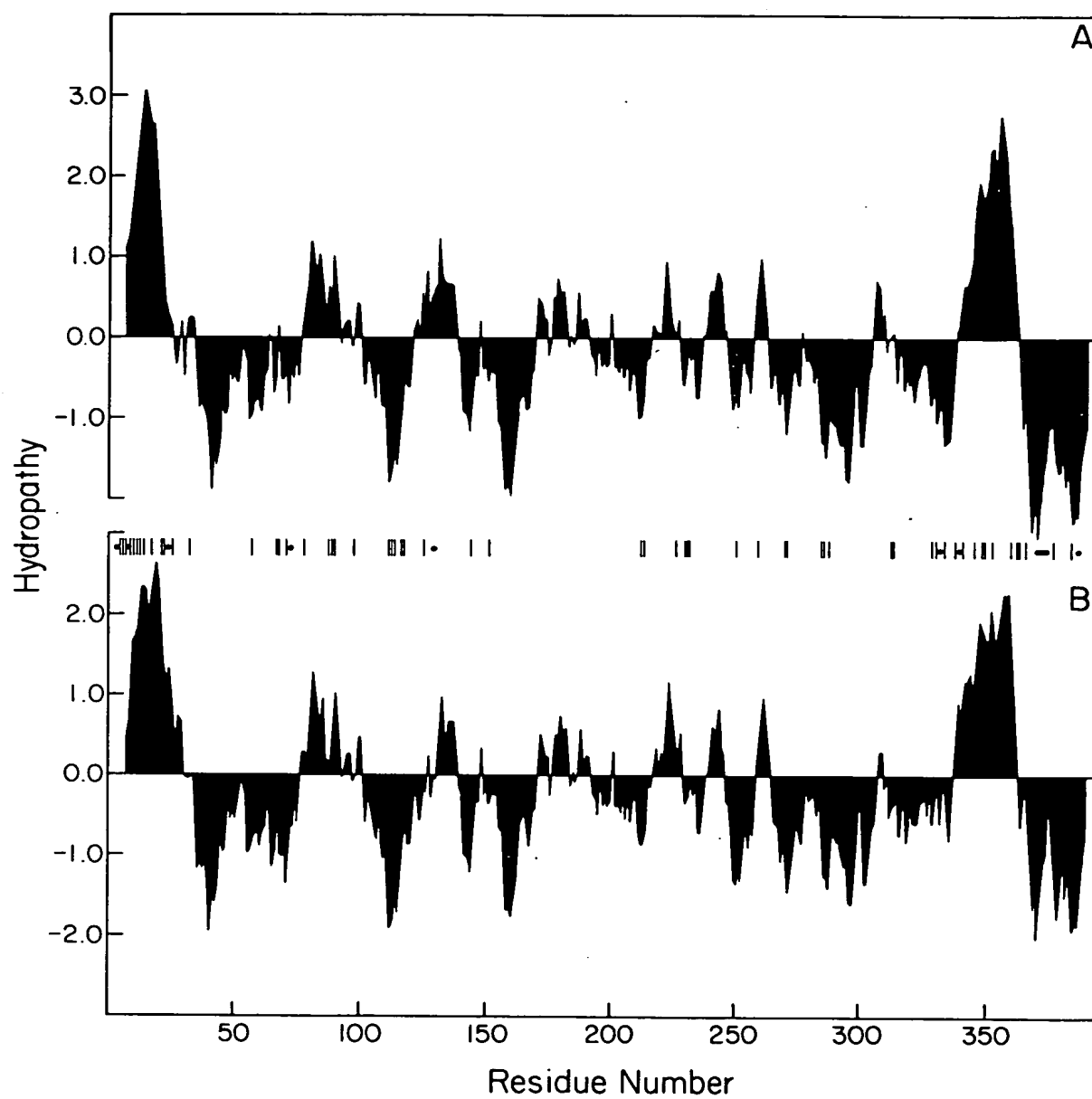


Fig. 2.

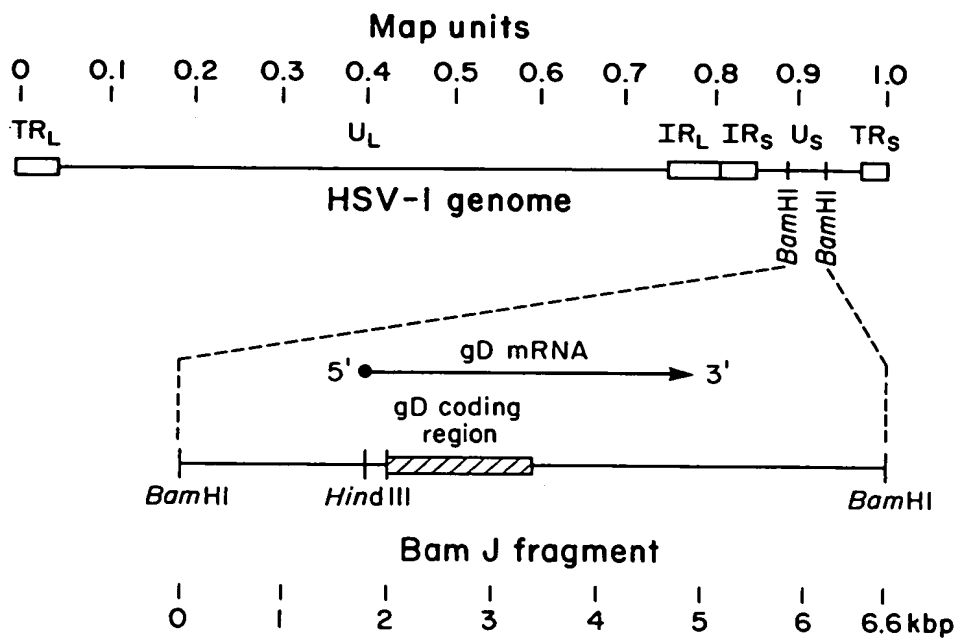


Fig. 3.

1. Digest with *Hind*III and *Bam*HI
2. Isolate 4.6kb gD encoding fragment
3. Ligate into *Hind*III-*Bam*HI cleaved DHFR vector

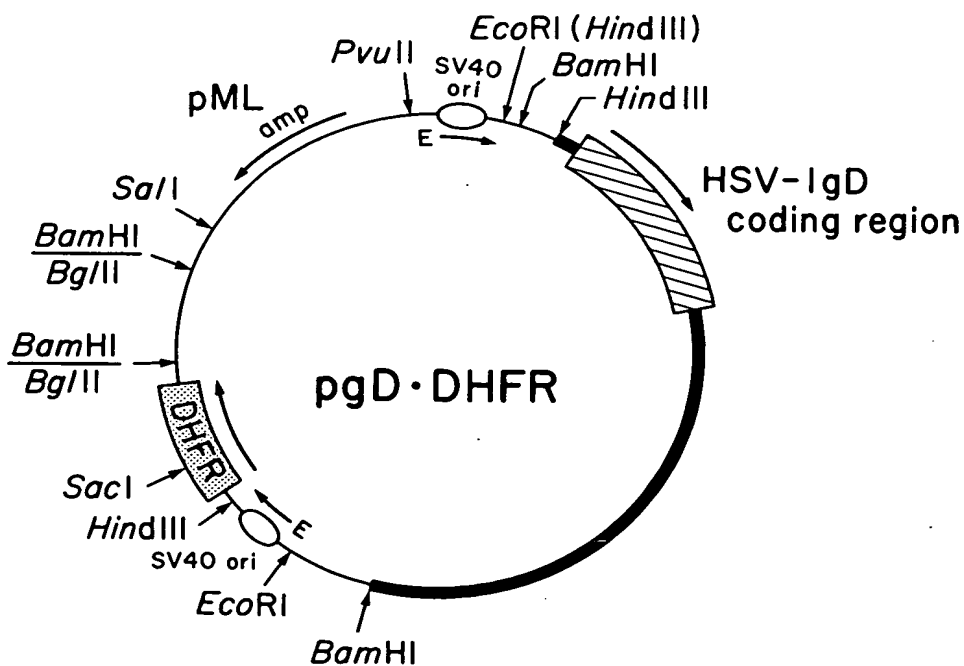


Fig.4.

A



B

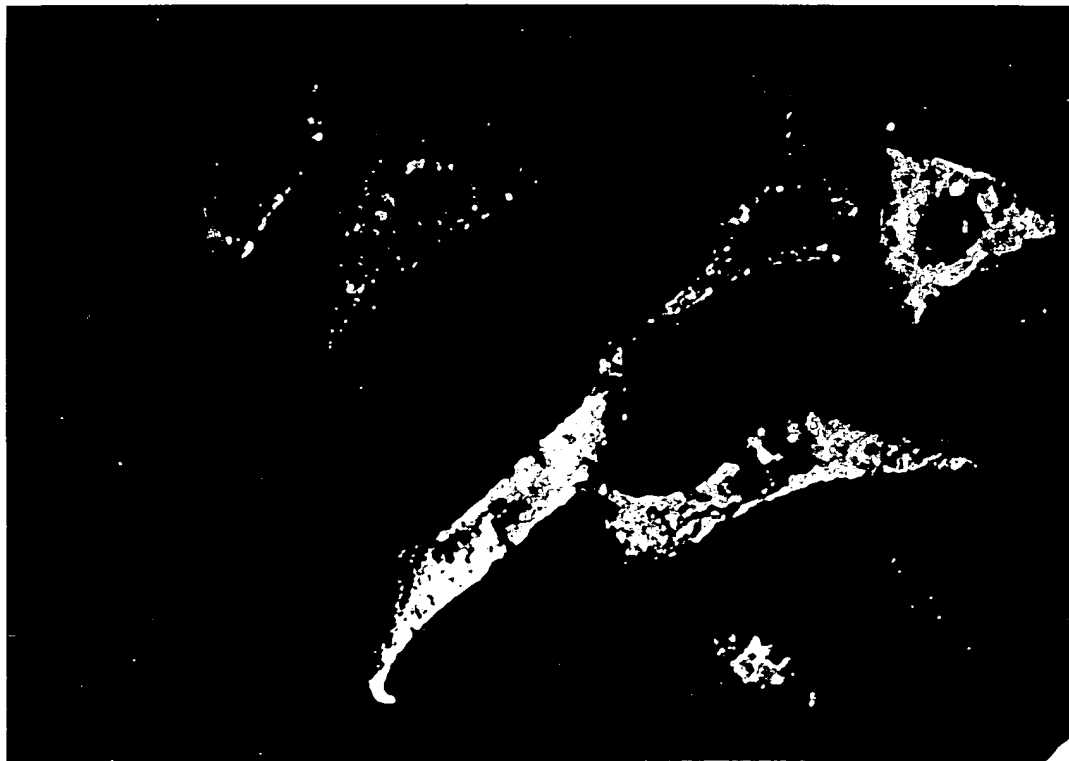


Fig. 5.

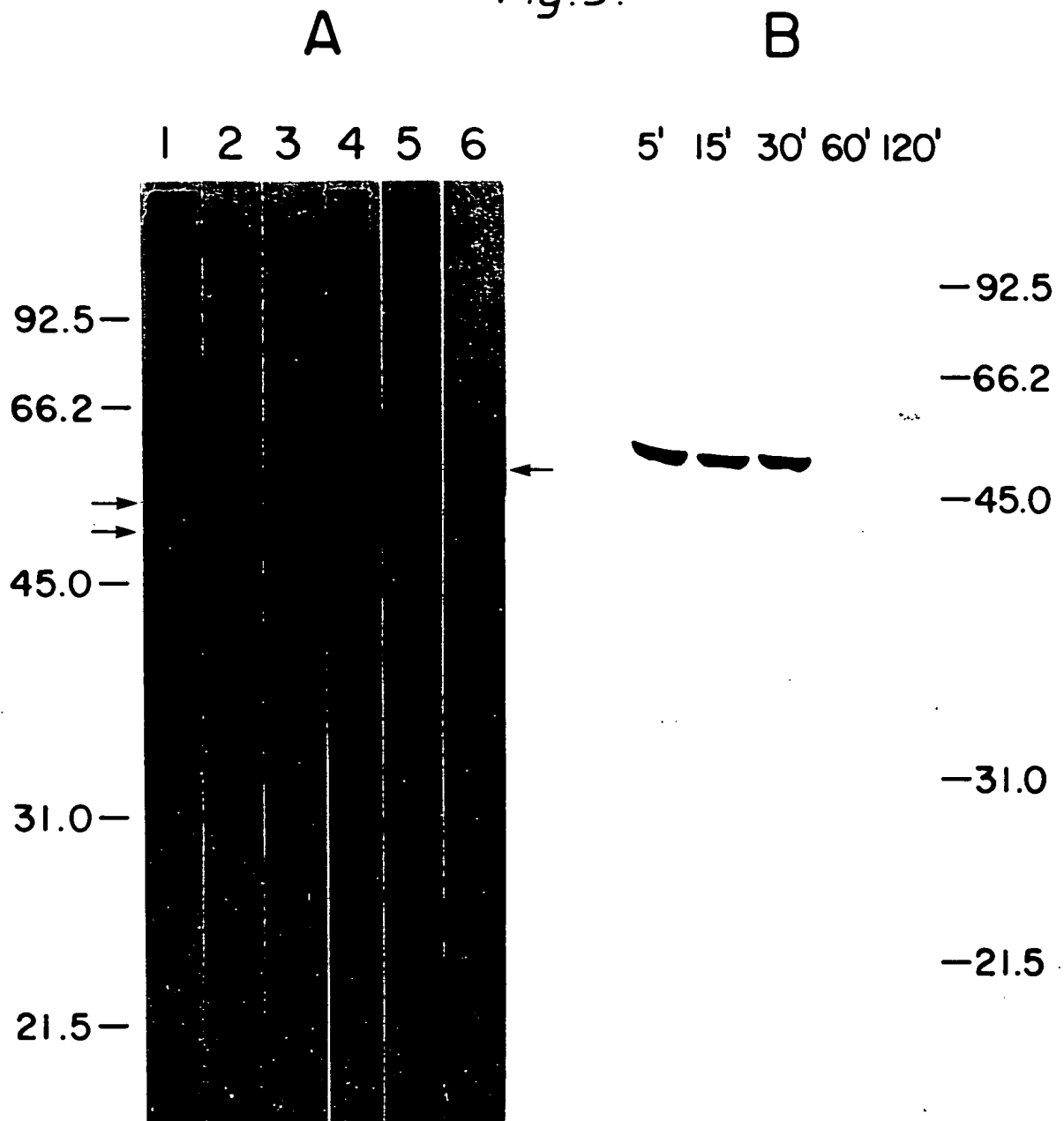


Fig. 6.

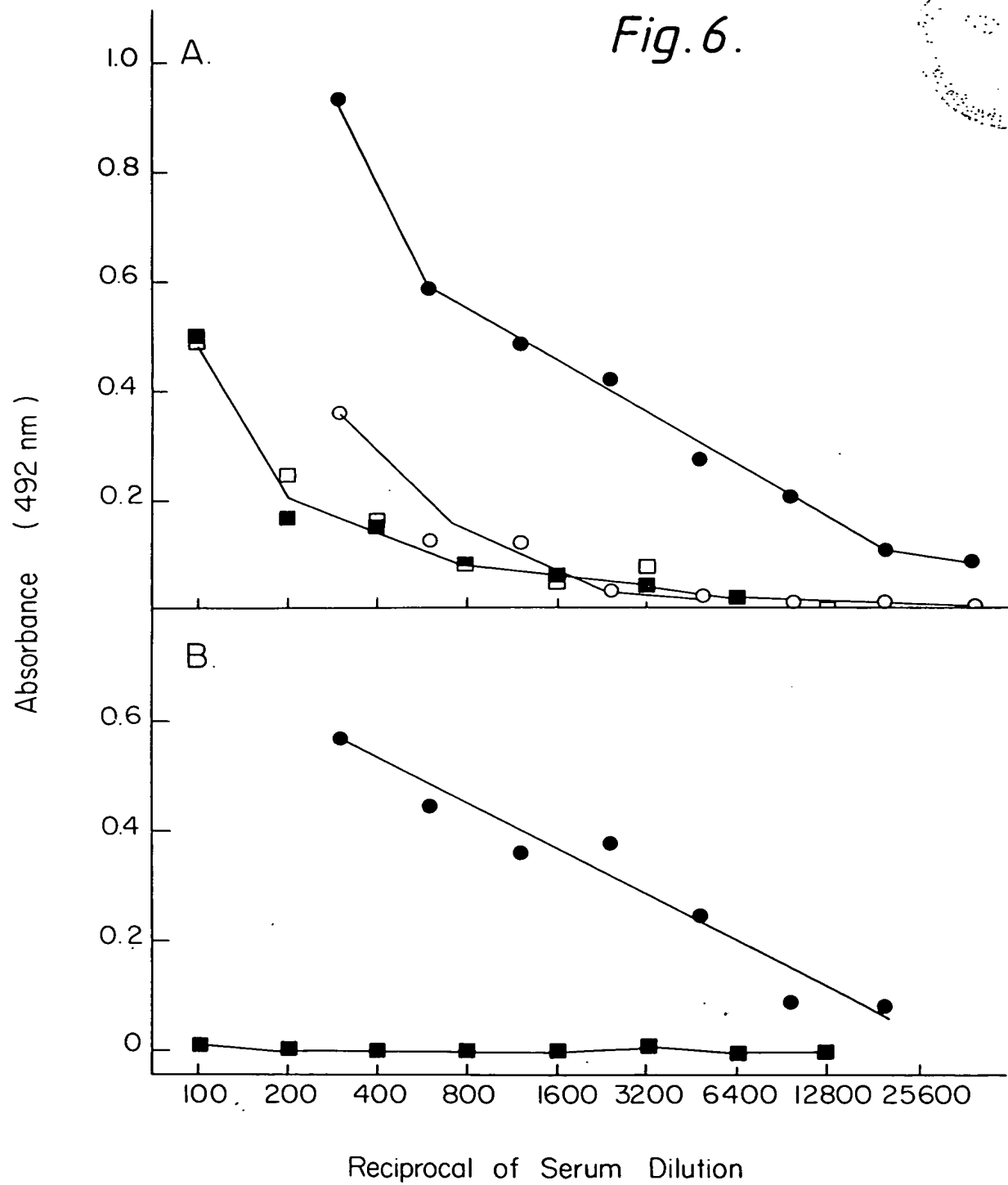
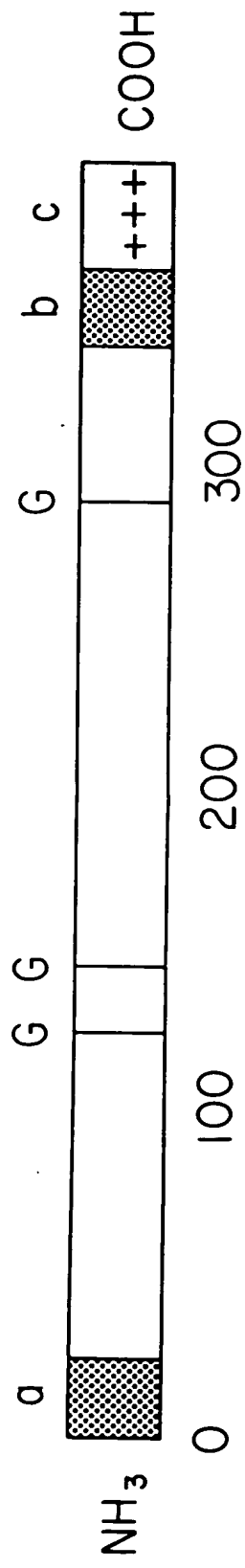


Fig. 7.



Amino Acid Number

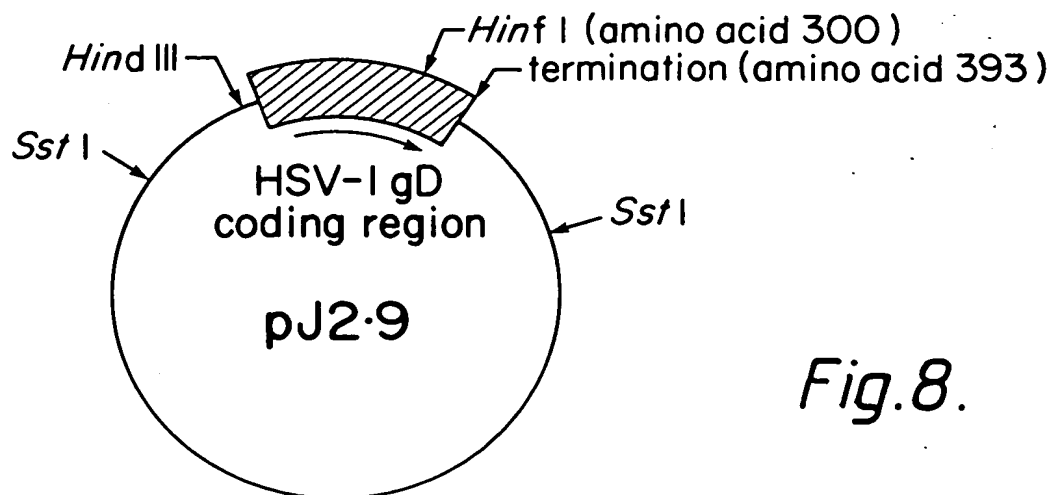


Fig.8.

1. Digest with *Hinf* I
2. Fill in with Klenow DNA polymerase and 4dXTPs
3. Digest with *Hind* III
4. Isolate 970bp truncated gD gene
5. Ligate to *Hind* III – *Hpa* I cleaved DHFR vector

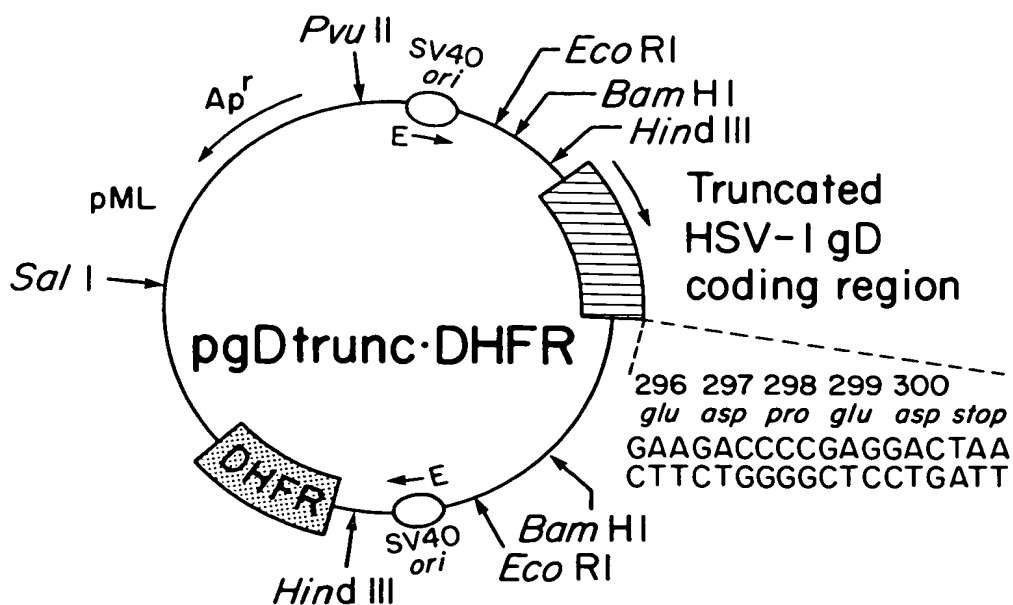


Fig. 9.

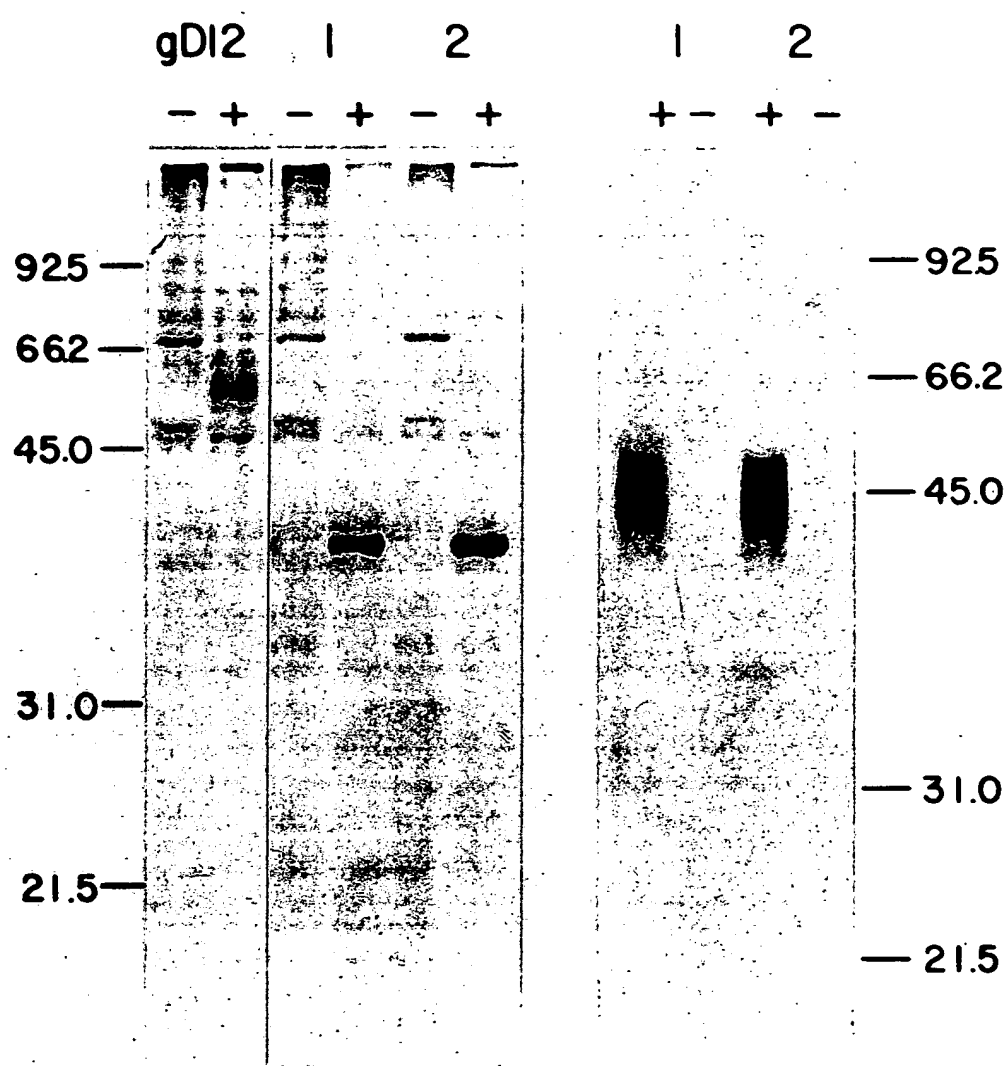


Fig.10.

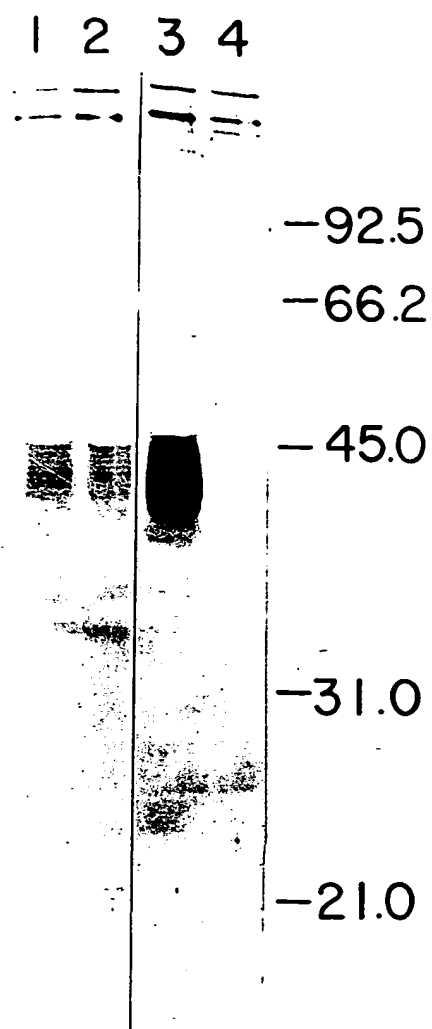
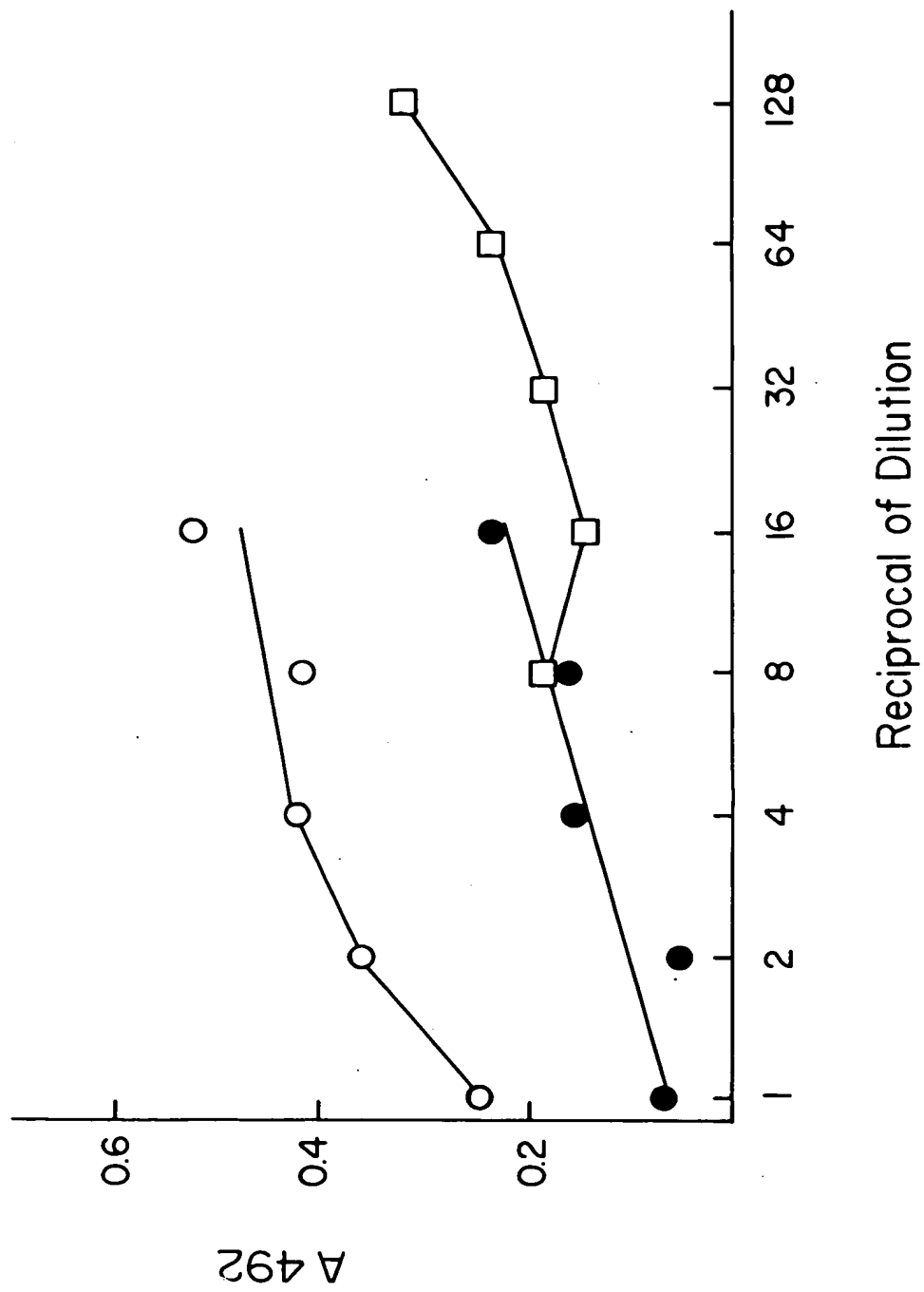


Fig. 11.



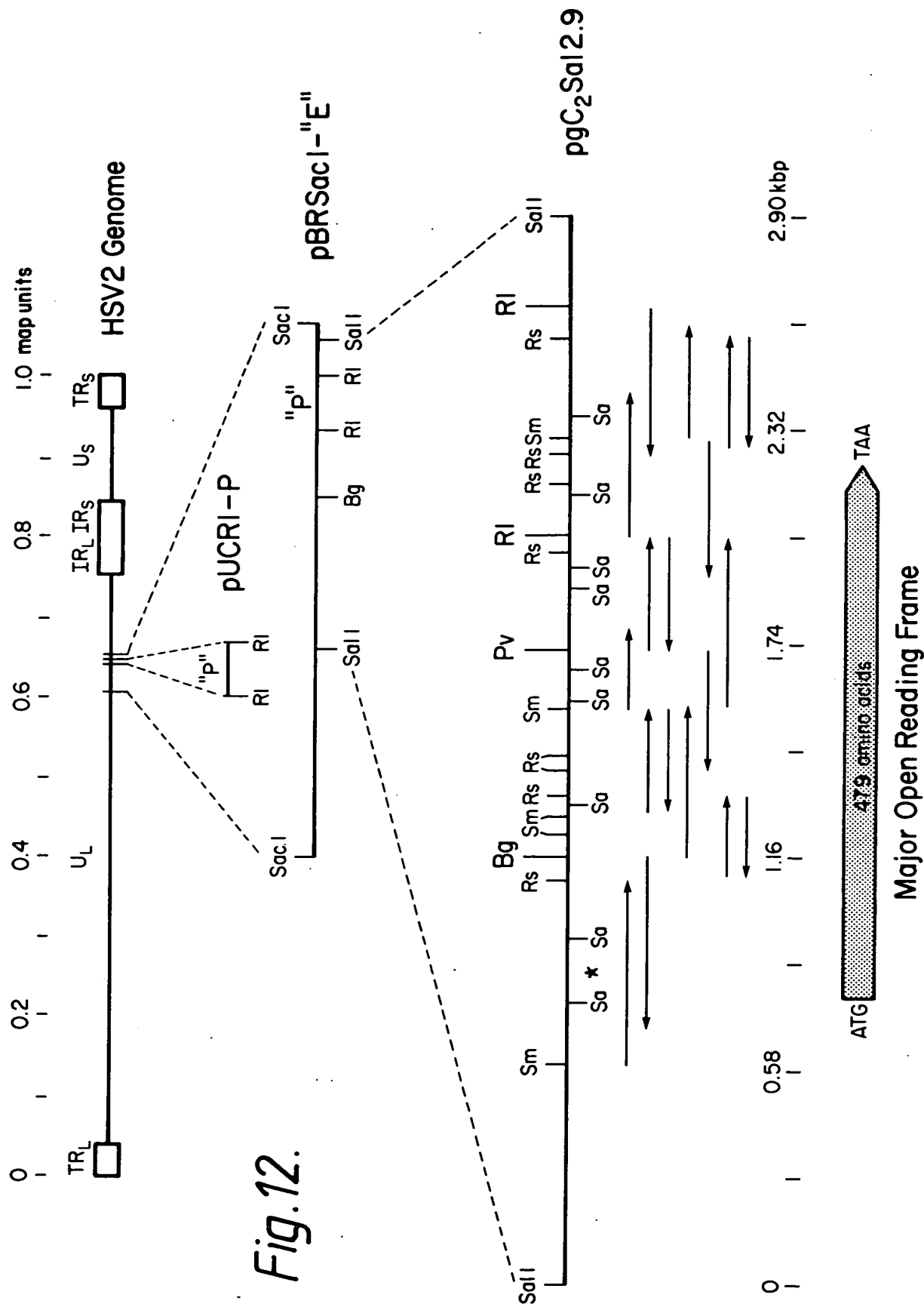


Fig.12.

Fig. 13(Part 1)

HSV-1	* * * *	* * *	* * *	* * *	* * *	* * *	60
HSV-2	G-GATGGGCCCCGGGTATAAATTCGGAAGGGGACACGGGCTACCCCTCACTACCGAGGGC						
	GTGCCGTGGA-CGGGTATAAAGGCCAGGGGGCAGGCGGGC--CCATCACTGTT-AGGGT						
	"TATA 1"					-----> HSV-1 gc	
						mRNA 5' end	
HSV-1	* * *	**	**	*	*	*	120
HSV-2	GCTTGGTCGGGAGGCCGCATCGAACGC-ACACCCCCCATCCGGTGG---TC--CGTGTGGA						
	GTTAGGTTGGAGGTGGCACAAAGCGACACACCCGTTGTGTAGTTGTCCGCGGGAGGC						
HSV-1	* *****	**	*	*	*	*	180
HSV-2	GGTCGTTTTTCAGTGCCCGGTC-TCGCTTTGCGGGGAACGCTAGCCGATCCCTCGCAAGG						
	GGTGGTTTCCGGCAACCC--TCCTCGCTGCGCGGGCGGCCACCGGTCTTCGCGGGG						
HSV-1	*** *****	*	*	*	*	*	240
HSV-2	GGGAGGCG---TCGGG-CATGGCCCCCTGGGCGGGTGGGCCTTGCCGTGCTGTGGGGC						
	GCCGGGCTCTTCTGTGTCATGGCCCTTGGACGGGTGGGCCTAACCGTGGGCTGTGGGGC						
	HSV-1 gc, HSV-2 gf initiation codons						
HSV-1	* * * *	* * *	***	*	*****	*	300
HSV-2	CTGTTGTGGCTCGGGGCGGGGGTGCGCGGGGCTCGGAACCTGCCTCCACCGGGCCACG						
	CTGCTGTGGGTGGGTGTGCTGTGCTGGCCAAT-----GCCTCCCCGGACGCACG						
HSV-1	* * *	**	**	*	*	*	360
HSV-2	ATCACCGCGGAGCGGTGACGAACGCGAGCGAGGCCCCACATCGGGGTCCCCCGGGTCA						
	ATAACGGTGGGCCCGCGGGGAACGCGAGCAATGCCGCCCTCG-----						

Fig.13(Part 2)

HSV-1	*****	420
HSV-2	GCCGCCAGCCCGGAAGTCACCCCCACATCGACCCCAACCCCAACAATGTCACACAAAC	

HSV-1	*****	480
HSV-2	AAACACACCCACCGAGCCGGCCAGCCCCCAACAACCCCAAGCCACCTCCACGCCC	
	-----GTCCCCCGGAACCGATCCGCCCCCGAACCACACCCACGCCCCCAACCCCGC	
HSV-1	*****	540
HSV-2	AAAGCCCCCCCCACGTCCACCCCGGACCCCAACCCCAAGAACACACCCCGCCCAAG	
	AAGCGACGAAAGTAAGGCCTCCACCGCCAAACCGGCCCGCC-----CCC---AAG	
HSV-1	*****	600
HSV-2	TCGGGCGGCCCACTAAACCCCGCGG---CCCGTGTGGTGGACCGCCGCGACCCCATG	
	ACCGGG---CCCCGGAAGACATCCTCGGAGCCCGTGGATGCAACCGCCACGACCCCGCTG	
HSV-1	*****	660
HSV-2	GCCCGGTACGGCTCGCGGGTGCAGATCCGATGCCGGTTTCGGAATTCACCCGCATGGAG	
	GCCCGGTACGGCTCGCGGGTGCAATCCGATGCCGGTTTCCCAACTCCACCCGCACGGAG	
HSV-1	*****	720
HSV-2	TTCCGCCCTCCAGATATGGCGTTACTCCATGGGTCCGTCCCCCCCCAATCGCTCCGGCTCCC	
	TCCCGCCTCCAGATCTGGCGTTATGCCACGGCGACGGACGCGGAGATCGGAACGGCGCCT	
HSV-1	*****	780
HSV-2	GACCTAGAGGAGGTCTCTGACGAACATCACCGCCCCACCGGGGGACTCCTGGTGTACGAC	
	AGCTTAGAGGAGGTGATGGTAAACGTGTGGCCCCCGCGGGGGCCAACTGGTGTATGAC	

Fig.13(Part 3)

HSV-1	AGCGCCCCAACCTGACGGACCCACAGTGTCTCTGGCGGAGGGGCCGGCCCGGGCGCC	840
HSV-2	AGCGCCCCCAACCGAACGGACCCGCACGTGATCTGGCGGAGGGGCCGGCCCGGGCGCC	
HSV-1	** *	
HSV-2	GACCTCCGTTGTATTCTGTACCGGGCCGCTGCCGACCCAGCGGCTGATTATCGGCGAG	900
	AGCCGCGGCTGTACTCGGTCTGTCGGGCCGCTGGGTCCGACGCGGCTCATCATCGAAGAG	
HSV-1	* *	
HSV-2	GTACGCCCCGCGACCCAGGGAATGTATTACTTGGCCCTGGGGCCGGATGGACAGCCCGCAC	960
	CTGACCTTGGAGACCCAGGGCATGTACTACTGGGTGTGGGGCCGGACGGACCCCGTCC	
HSV-1	* *	
HSV-2	GAGTACGGGACGTGGGTGCGCGTCCGCGATGTTCCGCCCCCGTCTCTGACCCCTCCAGCCC	1020
	GCGTACGGGACCTGGGTGCGCGTTCGCGTGTTCGCCCTCCGTGCTGACCATCCACCCC	
HSV-1	* *	
HSV-2	CACGCGGTGATGGAGGGTCAGCCGTTCAAGGCGACGTGCACGGCCGCCCTACTACCCG	1080
	CACGCGGTGCTGGAGGGCCAGCCGTTTAAGGCGACGTGCACGGCCGCCACCTACTACCCG	
HSV-1	* *	
HSV-2	CGTAACCCCGTGGAGTTTGACTGGTTCGAGGACGACCGCCAGGTGTTTAACCCCGGGCCAG	1140
	GGCAACCGCGGAGTTCGTCTGGTTCGAGGACGGTCGCCGGGTATTCGATCCGGCCCCAG	
HSV-1	** *	
HSV-2	ATCGACACGCAGACGCACGAGCACCCCGACGGGTTACCCACAGTCTCTACCGTGACCTCC	1200
	ATACACACGCAGACGCAGGAGAACCCCGACGGCTTTCCACCGTCTCCACCGTGACCTCC	
HSV-1	* *	
HSV-2	GAGGCTGTGGCGGCCAGGTCCCCCGCGGACCTTCACCTGCCAGATGACGTGGCATCGC	1260
	GCGGCCGTGGCGGCCAGGGCCCCCCCCGCGCACCTTCACCTGCCAGCTGACGTGGCACCCG	

Strain	Position	Sequence
HSV-1	1320	GACTCCGTGACGTTCTCGCGACGCAATGCCACCGGGCTGGCCCTGGTGTGCTGCCGCGGCCA
HSV-2	1320	GACTCCGTGTGTTCTCTCGGCGCAACGCCAGCGGCACGGCATCGGTGCTGCCGCGGCCA
HSV-1	1380	ACCATCACCATGGAATTTGGGGTCCGGGCATGTGGTCTGCACGGCCGGCTGCGTCCCCGAG
HSV-2	1380	ACCATTACCATGGAGTTTACGGGGGACCATGCGGTCTGCACGGCCGGCTGTGTGCCCGAG
HSV-1	1440	GGCGTGACGTTTGCCTGGTTCTCTGGGGGACGACCCCTCACCGGGCGCTAAGTCGGCCGTT
HSV-2	1440	GGGGTGACGTTTGCCTGGTTCTCTGGGGGACGACTCCTCGCCGGCGGAGAAAGGTGGCCGTC
HSV-1	1500	ACGGCCCCAGGAGTCGTGCGACACACCCCGGGCTGGCTACGGTCCGGTCCACCCTGCCCAT
HSV-2	1500	GCGTCCAGACATCGTGGGGGCGCCCGGACCGCCACGATCCGCTCCACCCTGCCCGTC
HSV-1	1560	TCGTACGACTACAGCGAGTACATCTGCTGGTTGACCGGATATCCGGCCGGGATTCCCGTT
HSV-2	1560	TCGTACGAGCAGACCGAGTACATCTGCGGGCTGGCGGGATACCCGGACGGAATTCGGTC
HSV-1	1620	CTAGAGCACCCACGGCAGTCACCAAGCCCCACCCAGGGACCCACCGAGGGCAGGTGATC
HSV-2	1620	CTAGAGCACCCACGGCAGCCACCAAGCCCCCGCGGGACCCACCGAGGGCAGGTGATC
HSV-1	1680	GAGGCGATCGAGTGGGTGGGATTGGAATCGGGGTTCTCGCGGGCGGGGTCCTGGTCGTA
HSV-2	1680	CGGGCGGTGGAGGGGCGGGATCGGAGTGGCTGTCTTGTGCGGGTGGTTCTGGCCCGG

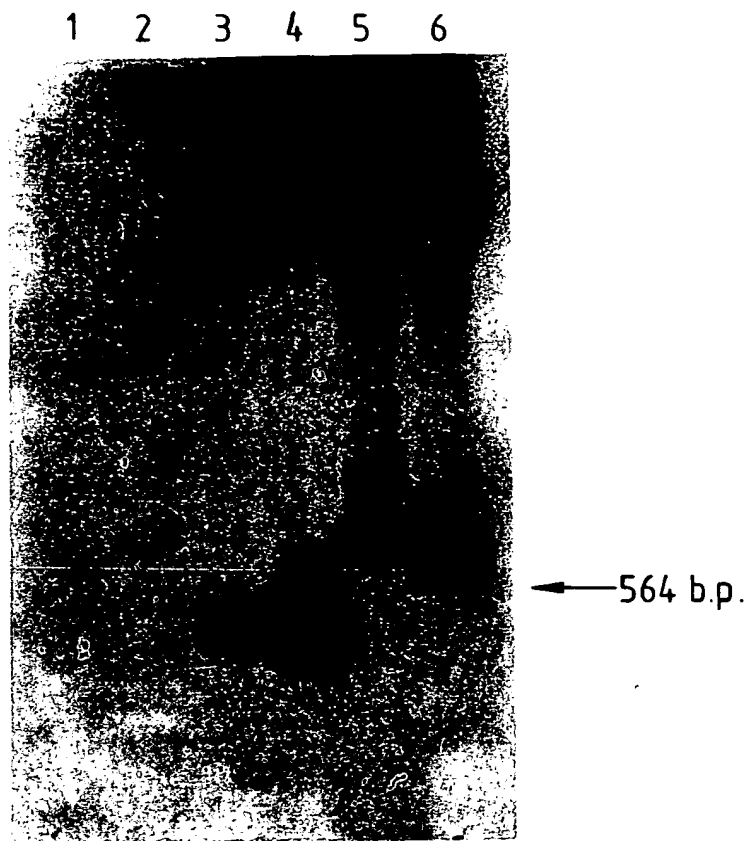
Fig.13(Part 5)

HSV-1	* * * *	* * * *	* * * *	* * * *	* * * *	* * * *	1740
HSV-2	ACGGCAATCGTGTACGTCCGTCACATCAGTCGCGCAGCGTCATCGGCGGTAACGC						
	ACCGGGTAGTGTAACCTACCCACGCTCCTCGGTGCGCTATCGTCGGCTGCGGTAACTC						
						HSV-1 gC, HSV-2 gF	
						termination codons	
HSV-1	* * * *	* * * *	* * * *	* * * *	* * * *	* * * *	1800
HSV-2	GAGACCCCCCGTTACCTTTTTTAATATCTATATAGTTTGGTCCCCCCTT---CTATCCCG						
	CGGGGCCGGGCCCGCGCGCGGT-TGTCTTCTTT-TCCACCCCTTCCGTCCCCCGTACCC						
HSV-1	* * * *	* * * *	* * * *	* * * *	* * * *	* * * *	1860
HSV-2	CC-----CACCAGCTGGGCGCTATAAGCC-GCCACCCCTCTC						
	ACCACACCCACCCACCCCGCGCGTCCCCCGGGCGTTATAAGC--CGCCGCACTCGC					"TATA 2"	
HSV-1	* * * *	* * * *	* * * *	* * * *	* * * *	* * * *	1920
HSV-2	TTCCCTCAGGTC---ATCCTTGGTC-GATCCCCGAACGAGACACGCGTGGAG---CAAAA						
	TTTTCCACCGGAAATCCTCGGCCCGATCC-GAACGGCGCACGCGCGTGGGCTCCAAA						
HSV-1	****	***	****	***	***	***	1980
HSV-2	CGCCTCCCGCTGAGCC-GCTTTCCTACCAACACACCGGCGCATGCC-----T-CT--G-----						
	CGCCTCCCGAAGAGAGCGGCCCGGCCCGGAT-ATTCAAGCCCGCGGTGGTGCTATGGCTTT						
						HSV-2 second open reading	
						frame initiation codon	
HSV-1	* * * *	* * * *	* * * *	* * * *	* * * *	* * * *	2040
HSV-2	-CGGGCATCGGAACAGCC-TACCGGCCCGCTGGGCCCGGGACACCCCCCATGCGGGGCTCG						
	CCGTGCTTCGGGACCGCGCTACCGAGCCCTCGCCCCCGGGCGCTCCCCCGCGGGGCTCG						
						730 bp HSV-1 mRNA	
						initiation codon	

Fig. 13 (Part 6)

HSV-1	** * *	* * *	* * *	** *	** *	***	* * *	* * *	* * *	2100
HSV-2	GCTCCCGCGCGGCTGGGTTGGCGTCGGGACCATCATCGGGGGAGTTGTGATCATTGC	TGTTCCGGCGGTGGCCTGGATCGGCGTCGGAGCGATCGTCGGGGCCTTTGCGCTCGTCGC								
HSV-1	*	*	*	*	*	*	*	*	*	2160
HSV-2	CGCGTTGGTCCCTCGTGCCCTCGCGGGGCCCTCGTGGGCACATTCCCCCATGCGACAGCGGATG	CGCGTTGGTTCCTCGTACCCCTCGGTCCCTCGTGGGACTCTGCCCGTGCGACAGCGGCTG								
HSV-1	* *	***	* * *	* * *	*	*	*	*	*	2220
HSV-2	GCACGAGTTCAACCTCGGGTGCCATATCCTGGGATCCGACCCCATGGAGCACGAGCAGGC	GCAGGAATTCACGCGGGATGCGTCGCTGGGACCCACCCCGTCGAGCACGAGCAGGC								
HSV-1	*	*	*	*	*	*	*	*	*	2280
HSV-2	GGTCGGCGGCTGTAGCGCCCCGGCGACCCCTGATCCCCCGCGCGGCTGCCAAACAGCTGGC	GGTCGGCGGCTGCAGCGCGCGGCCACCCCTTATCCCCCGTGCGGCGCCAAAGCACCTGGC								
HSV-1	** **	*	**	*	*	*	*	*	*	2340
HSV-2	CGCCGTCGCACGCGTCCAGTCGGCAAGATCCTCGGGCTACTGGTGGGTGAGCGGAGACGG	CGCTCTGACACGCGTCCAGCGGAGAGATCGTCGGGTTACTGGTGGGTGACGGAGACGG								
HSV-1	*	*	*	*	*	*	*	*	*	2400
HSV-2	CATTCGGGCGCCCTGCGGCTCGTCGACGGCGGTGGCGGTATTGACCAGTTTTGCGGAGGA	CATCCGGACCTGTCTGAGACTCGTCGACAGCGTCAGTGGCATCGACGAGTTTTGCGGAGGA								
HSV-1	*									2460
HSV-2	GCCCGCCCTTCGCATATGCTACTATCCCCGCAGTCCCGGGGCTTTGTTTCAGTTTGTAAAC	GCTC								
HSV-1	TTCGACCCGCAACGCGCTGGGGCTGCCGTGA									2491

Fig.14.



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Fig. 15(Part 2)

HSV-1 gC	250	MDS	PHE	YGT	WVR	VMF	RP	PS	LT	LQ	PH	AV	ME	GQ	PF	KAT	C	T	A	A	A	Y	P	R	N	P	V
HSV-2 gF	217	TDR	PSA	YGT	WVR	VRV	FR	PP	SL	TI	HP	HA	VL	EG	QP	FK	AT	C	T	A	A	T	Y	P	G	N	R
HSV-1 gC	300	FDW	FED	DRQ	VFN	PN	GQ	ID	TQ	TH	EP	DG	FT	TV	ST	VT	SE	AV	GG	QV	PP	RT	FT	C	Q		
HSV-2 gF	267	FVW	FED	GRR	VFD	PA	QI	HT	QT	QEN	PD	GF	ST	VT	SA	AV	GG	QV	PP	RT	FT	C	Q				
HSV-1 gC	350	MTW	HRD	SV	TF	SR	RA	AT	GL	AL	VL	PR	PT	IT	ME	FG	VR	HV	V	C	T	A	G	C	V	P	
HSV-2 gF	317	LTW	HRD	SV	SF	SR	RA	AT	GL	AL	VL	PR	PT	IT	ME	FG	VR	HV	V	C	T	A	G	C	V	P	
HSV-1 gC	400	WFL	GDD	PS	PA	AK	SA	VT	AQ	ES	C	D	H	P	GL	AT	VR	ST	LP	IS	YD	SE	YI	C	W	L	
HSV-2 gF	367	WFL	GDD	SS	PA	EK	VAV	AS	QT	S	C	G	R	P	G	T	IR	ST	LP	VS	YEQ	TE	YI	C	R		
HSV-1 gC	450	AGI	PV	LE	HG	SH	QPP	PR	DP	TER	QV	IE	AW	GI	GV	LA	AG	VL	VV	TA	IV						
HSV-2 gF	417	DGI	PV	LE	HG	SH	QPP	PR	DP	TER	QV	IR	AV	GI	GV	LA	AG	VL	VV	TA	IV						
HSV-1 gC	500	VVR	TS	QSR	QR	HR																					
HSV-2 gF	467	LTH	ASS	VRY	RR	LR																					

Fig. 16.

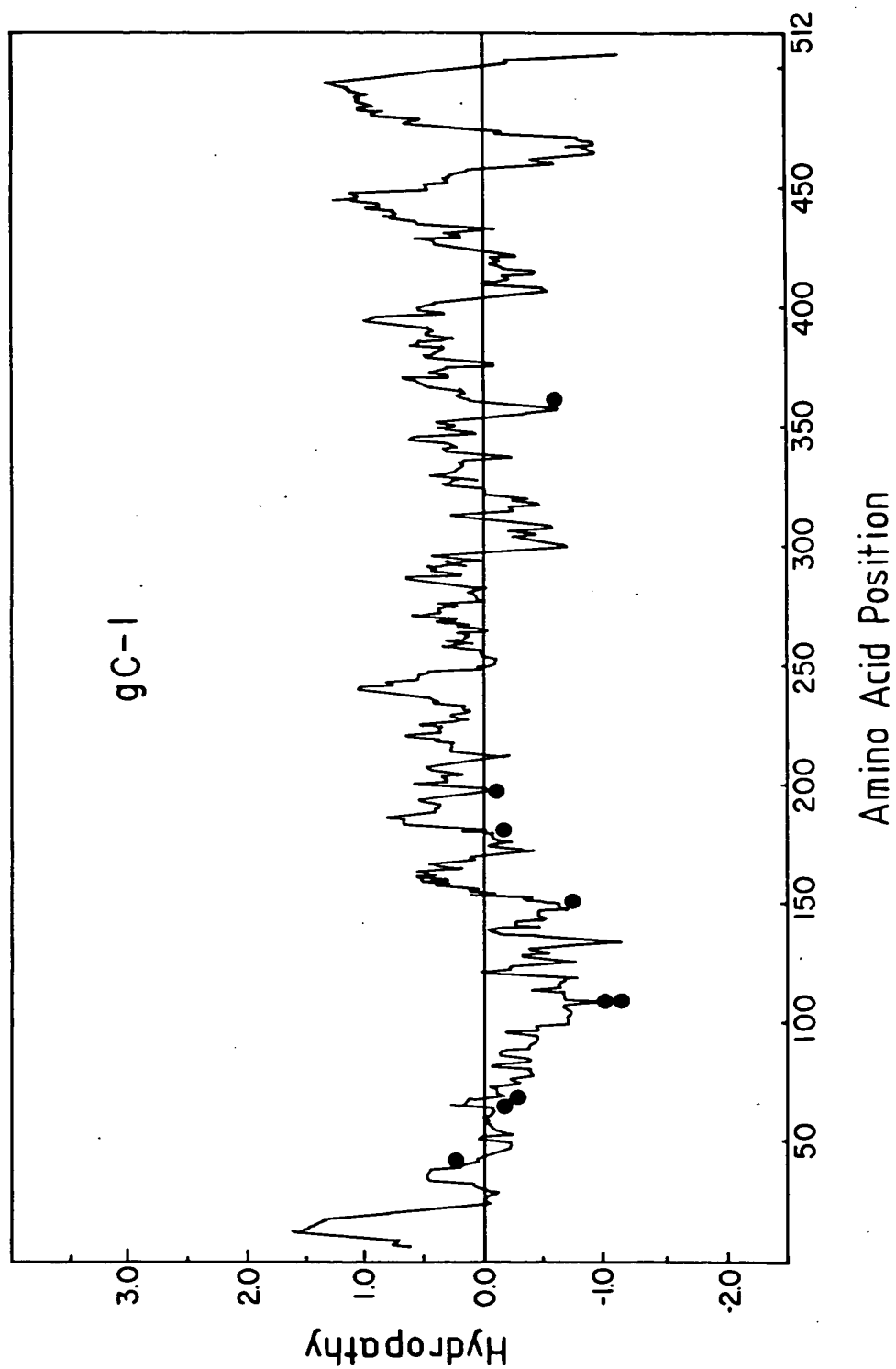


Fig. 16(Cont.)

